

ABSTRACT

A method for mechanically assisting the pumping action of the heart. A catheter is provided comprising an elongate member having a proximal end, a distal region, an expandable member attached in the distal region, and an inflatable member in the distal region and attached distal the expandable member. The catheter is advanced into the aorta. The expandable member is expanded to at least partially obstruct the aorta. The inflatable member is inflated during diastole. The inflatable member is then deflated by withdrawing gas during the ejection phase of the left ventricle. The pumping action of the heart is thereby mechanically assisted. In other methods, volume displacement propagation is achieved by sequentially activating a series of balloons. Cerebral perfusion augmentation may also be achieved by use of combined coarctation-counterpulsation devices and methods. Devices for practicing methods with increased volume-displacement efficiency are also described.

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